

Listing of Claims:

Claims 1-20 (cancelled)

21. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 39~~40~~, wherein the current receptor means (6) comprises at least one series assembly (61, 62) formed of a-resistors (R1, R2) and a commutation element (Q5).
22. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 39-40, wherein the modulated current (Iout) has a first asymmetric form when the ~~object-propeller~~ turns in one direction and-the same form but seen in a mirror a mirror image of the first asymmetric form when the ~~object (3)-propeller~~ turns in the other direction.
23. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 39~~40~~, wherein the magnetic detection device (2) is a linear sensor delivering two pairs of signals out of phase with each other, said signals being relative to the angular position of the ~~object propeller~~.
24. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 23, wherein the modulated current (Iout) has a first asymmetric form when the ~~object-propeller~~ turns in one direction and-the same form but seen in a mirror a mirror image of the first asymmetric form when the ~~object (3)-propeller~~ turns in the other direction.
25. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 23, wherein the device comprises two comparators (C1, C2), the input of each receiving the signals of a pair, the output of each comparator (C1, C2) being connected to the conductor (4) via a-resistors (R1, R2) of a series assembly, the two resistors (R1, R2) having different values.
26. (Currently amended) Device for measuring the speed and direction of rotation of an ~~object (3)-the propeller~~ according to claim 25, wherein each comparator (C1, C2) includes a commutation element (Q5) for the current receptor means (6).

27. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3) the propeller~~ according to claim 3940, wherein the magnetic detection device (2) is a digital sensor delivering a signal representative of the speed and a signal representative of the direction of rotation of the object propeller.
28. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3) the propeller~~ according to claim 3940, wherein the modulated current (I_{out}) has a cyclic ratio greater than a predetermined threshold when the object ~~(3) propeller~~ turns in one direction and a cyclic ratio less than the predetermined threshold when the object ~~(3) propeller~~ turns in the other direction.
29. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3) the propeller~~ according to claim 23, wherein the modulated current (I_{out}) has a cyclic ratio greater than a predetermined threshold when the object ~~(3) propeller~~ turns in one direction and a cyclic ratio less than the predetermined threshold when the object ~~(3) propeller~~ turns in the other direction, and wherein the device comprises two comparators (C1, C2), the input of each receiving the signals of a pair, a means of encoding (50) the direction of rotation of the object propeller, the input of which is connected to the output of the comparators (C1, C2), a means of mixing (51), the input of which is connected to the output of the comparators (C1, C2) and to the output of the means of encoding (50), the output of the means of mixing (51) delivering a unique signal (S) reflecting the speed and direction of rotation of the object ~~(3) propeller~~, said unique signal controlling the current receptor means (6).
30. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3) a propeller~~ according to claim 29, wherein the means of mixing (51-83) and a means of mixing (83) are formed by a circuit based on logic gates (60 to 65, 800 to 805).
31. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3) the propeller~~ according to claim 29, wherein the means of encoding (50) the direction of rotation comprises a switchover D.

32. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3)-the propeller~~ according to claim 3940, wherein the modulated current (Iout) has a cyclic ratio greater than a predetermined threshold when the ~~object (3) propeller~~ turns in one direction and a cyclic ratio less than the predetermined threshold when the ~~object (3) propeller~~ turns in the other direction, and wherein the device comprises, means of mixing (83), the input of which is connected to the magnetic detection device (80) and the output of which delivers a unique signal (S) reflecting the speed and direction of rotation of the ~~object (3) propeller~~, said unique signal controlling the current receptor means (6).
33. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3)-the propeller~~ according to claim 32, wherein the means of mixing (51, 83) are formed by a circuit based on logic gates (60 to 65, 800 to 805).
34. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3)-the propeller~~ according to claim 3940, wherein the magnetic detection device (3, 80), the conductor (4) and the current receptor means (6) at least are encapsulated in an enclosure (1) made out of non-magnetic material, the conductor (4) being accessible from the exterior of said enclosure (1).
35. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3)-the propeller~~ according to claim 34, wherein the enclosure (1) is formed out of metal such as titanium or stainless steel.
36. (Currently amended) Device for measuring the speed and direction of rotation of an object ~~(3)-the propeller~~ according to claim 3940, wherein the magnetic detection device (3, 80) is connected to another conductor (5) for its power supply, said other conductor (5) coming into electrical contact with the enclosure (1).
37. (Currently amended) Magnetic system for acquiring data in a flow, wherein the system comprises a measuring device according to claim 3940, and an ~~object (3) in the form of~~ a non-magnetic propeller (30) integral with at least one magnet (31).

38. (Previously presented) Magnetic system for acquiring data according to claim 37, wherein the propeller (30) and the measuring device are in the same line as each other, along the axis of the propeller.

39. (Cancelled)

40. (New) Device for measuring the speed and direction of rotation of a non-magnetic propeller integral with at least one magnet, the propeller being in a flow and being near to where the device is placed, the device comprising:

- a magnetic detection device (2) that delivers, in response to a rotation of the propeller generating a magnetic field variation, signals representative of the propeller's speed and direction of rotation,
- a conductor (4) intended to be connected to a power source to supply current to the magnetic detection device (2) at least,
- a current receptor means (6) placed between the magnetic detection device (2) and the conductor (4) that creates, from signals coming from the magnetic detection device (2), a modulation of the current (I_{out}) flowing in the conductor (4),
- wherein the frequency of the modulated current (I_{out}) or the number of transitions that it has reflects the speed of the propeller, and the form of the modulated current (I_{out}) reflects the direction of rotation of the propeller.